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ABSTRACT
            An introductory article and ten research reports are
presented. The introductory article, "A Challenge To Implement
Research," by Ben J. Wiens, discusses how the Pennsylvania
Association of Teacher Educators (PATE) is working to encourage
much-needed research. The studies are 1) "A Descriptive Summary of
Elementary Student Teaching Programs in Pennsylvania," by Ronald Lee
Baker; 2) "The Influence of the Classroom Verbal Behavior of
Cooperating Teachers Upon the Verbal Behavior of Selected
Intermediate Grade Student Teachers," by Lester J. Bowers; 3)
"Student Teacher Changes in Beliefs and Practices Related to Teaching
Elementary School Science," by Robert L. King; 4) "A Determination of
the Practicality of Making the Use of an Informal Reading Inventory
More Applicable to the Needs of the Classroom Teachers," by Catherine
Blynn; 5) "The Development of a Model for a Student Personnel
Services Program in a State College," by Philip Leroy Garrett; 6)
"Computer-Assisted Self-Instruction of Interaction Analysis," by J.
David Feeter; 7) "The Relationship of Counselor and Client Needs to
Occupational Outcomes," by Margaret Reed Elo; 8) "Student Teaching
Rosters by EDP," by Francis A. Colabrese and Christine J. Kitchen; 9)
"The Effects of a Cultural Enrichment Unit on the Achievement and
Attitudes of Fourth Grade Pupils," by Alma Hartman Schlenker; and 10)
"On Becoming a Teacher," by Lorraine Morgan. (MBM)

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Research For Better Teaching

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Volume II

PENNSYLVANIA ASSOCIATION
OF
TEACHER EDUCATORS

A STATE UNIT OF THE ASSOCIATION OF TEACHER EDUCATORS*
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*Formerly, Association for Student Teaching

MAY, 1971

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FORWARD

One of the more important functions of an active professional organization is the communication it affords to members. This function has been given a high priority by the executive committee of the Pennsylvania Association of Teacher Educators. Therefore we are quite proud to present to our members this collection of pertinent research.

This collection is the result of the time and effort of the authors as well as their gracious willingness to have it published. These professionals deserve our thanks. The organization owes a special thanks to Dr. Ben J. Wiens for his direction in compiling this collection of research.

Reading research, sometimes a tedious task, is necessary to broaden one's understanding of the breadth, depth, and direction of professional activity. It can provide the interested reader with new and modified ideas which may provoke better teaching, administration, or research. We hope that this collection will help the reader accomplish some of these objectives.

Respectfully,

Dr. Larry Nanns
President, P.A.T.E.

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To the Reader:

It is anticipated that the reader will find some stimulating ideas within these pages. In this publication only summaries of studies are included and readers are encouraged to correspond with authors for more detailed information.

On page 88 there is an "Article Report Form" to be used by individuals who are currently engaged in research or planning projects which will be of interest to Pennsylvania educators. Intentions to submit an article next spring should be indicated as early as possible. A late spring publication is being planned with representative articles from a wide range of studies.

Copies of this publication may be obtained from Professor Ray Sunderland, executive secretary of PATE, Kutztown State College, Kutztown, Pennsylvania 19530.

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A CHALLENGE TO IMPLEMENT RESEARCH
Ben J. Wiens

We live in an age in which research is more highly prized than ever before. Developments in education, space, human relations, medicine and various phases of technology are yielding thrilling developments. Recent developments in education have emphasized the growing impact of research as a means of examining the status and future of educational innovations. This Association has long demonstrated its concern for research and its usefulness in charting educational programs and materials for children. There have been research articles in the various journals, and at PATE conventions which have contributed to research sensitivity among teachers and administrators. What is needed, however, is a concerted effort by PATE to research its own areas of concern.

I hope that we do not just accept a word research as a fashionable cliché in the profession. It is interesting that as educators talk about the values of research one does not often find teachers with released time for research. Neither do we find many schools with research assistants or specialists to assist teachers in translating research into practice or in designing simple research activities. It is also interesting to note that very few faculty meetings seem to be devoted to a consideration of research findings on a given topic of concern to the teachers in the school. It is very sad to note that in many cases teachers and administrators deal with children and their problems in a manner which does not relate the immediate problem to the storehouse of information we already possess about growth, learning, human relation, or evaluation. This is not to scald our profession; it is merely to relate the urgency for PATE and for each of us to face the challenge to implement research.

Our Research Dilemma

Many of us today are in a most peculiar position regarding the implementation of research. Some seem to feel that the numerous new developments in technology and organization should be immediately put into practice in our schools. To raise questions, to ask for supporting evidence, to analyze underlying assumptions is to be labeled a conservative and a person who is to maintain the status quo! How short sighted one would be to take the position that the new is not good and should not be used. Likewise, it is also shortsighted to accept the new without studying underlying assumptions and supportative evidence.

It seems more than reasonable for educators, yes modern educators, to maintain allegiance to our basic knowledge of growth and development, learning and evaluation as a frame of reference within which we view new innovations. Extensive and fundamental research in these areas should be encouraged. However, until evidence emerges that basic principles of growth, learning and evaluation are unsound, then we need to maintain a core of theory within which we receive the new. This is a point which cannot be compromised.

The Challenge for Research

Today's challenge to implement research has a marked degree of urgency. Many of the media are so new, and so dramatic, and so radically different that we dare not concern ourselves with both an extremely careful examination of innovations and also the formulation of research designs which will yield needed information. Five areas of concern are presented for consideration

Concern for technology. Although there is no intention of

ridiculing the importance of technology, the basic question concerns the
identification of effective uses. Technology is a wonderful resource
for enriching, for bringing dynamic forces into the classroom. Creative
uses of technology consistent with our knowledge of growth, learning and
creativity need to be developed. This calls for the best application
possible of all we know about planning, organization, materials, motiva-
tion and teaching. Since teaching is more than telling, since it involves
exploring and discovering, much new thinking needs to be done.

Machines and programmed learning likely have potential value.
The value will not be uniform for all children. Certainly we must have
learned something from "workbooks" and "seat work" which we must not
duplicate. How can programmed materials be developed? Who should
develop such materials? How can the teacher resist over-selling by
commercial producers? This does not reject technology! It rejects poor
uses of machines.

Our concern for technology is that the feelings of children are
to be respected. Teachers who care make contacts with children that
are subtle, warm and human. This is a challenge to relate relevant
research to automated procedures!

Concern for organization. Recent years have focused much atten-
tion on team teaching, ungraded primary schools, departmentalized schools,
and other "Organizational" features. To be sure we need to examine our
organizational patterns. To be sure we need to improve uses of faculty
and to extend learning and growth opportunities for children. Yet we
desperately need to know more about pressures of organization on chil-
dren, about the consequence of having little children adjust to a

variety of "adult specialists." We need again to study (1) the relation-
ship of time factors to learning, (2) the relationships of experience to
learning, (3) the relationships of emotional factors, classroom environ-
ment, peer relationships to learning, (4) the nature of cognitive struc-
ture, (affective domain), (5) the evidence that attitudes are uniquely
different when various organizational innovations are employed. The re-
search challenge in all aspects of organization are unlimited for we know
that organization is not an end--but a function of purpose.

Concern for Accountable education. Many people are concerning
themselves with the quest for accountability. Quality cannot be thought
of as "more," "getting tough," "emphasis on gifted," or "achievement."
Quality education enables people to work together, to share, to think,
to plan, to create, to value, to grow. The wealth of experience in PATE
underscores the need for marked emphasis on research which helps us to
better understand thinking, valuing, creativity, problem solving, human
relationships, skill development. We need new, improved materials, perfected
evaluation materials, new ways of interpreting such factors to teachers
and to parents.

Concern for new knowledge. No period in history, no race, no
profession has a monopoly on research. We must saturate our professional
organizations, our colleges, our schools with the importance of acting on
research and also on the importance of securing new knowledge. How can
we remain vigorous and alert and dynamic unless we are moving forward?

The decade ahead seems to be demanding change in education. We
can use this "desire for change," "this readiness period" to make use of
knowledge about children--their growth and learning and creativity.

To put the challenge another way, we can delegate planning to technicians, electronics workers, and others or we can get busy with the job of communicating and extending our research knowledge and building respect, facilities, and plans for communicating our knowledge about children, growth and learning.

The challenge is actually one of setting up demonstrations of the consequence of research and building strong programs. Programs based on sound theory regarding learning, growth, human relations. Educators must not delegate research to those remote from children.

This organization (PATE) has a direct line to raw material for educational research. Teachers must acquire the behavioral competency of acting only in response to accurate information about learning. I recommend, that there be an active standing committee appointed to originate studies peculiar to the improvement of programs in teacher education. The studies in this Bulletin are critical but do not represent an organizational effort necessary for success in the seventies.

A DESCRIPTIVE SUMMARY OF ELEMENTARY
STUDENT TEACHING PROGRAMS
IN PENNSYLVANIA

By Ronald Lee Baker*

The Problem Stated

The purposes of this study were: (1) to develop a model elementary student teaching program based on desired standards as revealed in the literature; (2) to provide a descriptive summary of elementary student teaching programs now operated by accredited teacher education institutions in Pennsylvania; (3) to compare existing elementary student teaching practices and policies with those of the model program developed by the writer; and (4) to recommend possible modifications and/or innovations for the improvement of student teaching experiences for prospective elementary teachers based on the model.

Procedures

1. Two instruments--one in the form of a questionnaire and the other in the form of an interview guide--were constructed.

2. After a pilot study was conducted out of state involving four institutions, all 57 institutions in Pennsylvania that prepared elementary school teachers were contacted. One institution, which was phasing out its elementary student teaching program during the 1969-70 school year, was dropped from the study.

3. While all 56 institutions were sent the questionnaire, interviews were conducted at 36 of the schools. Only five colleges failed

to respond to the questionnaire, giving the investigator a 91 percent return.

Findings

Because of the extent of the study, only a portion of the findings are reported here. The following data represent some of the more pertinent findings.

The Institution. Of the 51 institutions involved in the study, undergraduate enrollments ranged from 300 to 35,000. The approximate number of elementary teachers graduated in 1968-69 varied from a low of 10 to a high of 550. All schools were approved by the State and the Middle States Association. However, only 26 of the institutions had NCATE approval. Forty-two of the schools indicated they possessed a written statement of student teaching objectives.

The Student Teaching Administrator. Two out of every three administrators were male. Titles ranged everywhere from Chairman of the Department of Education to Director of Professional Laboratory Experiences. Thirty-one out of the 51 institutions surveyed had one administrator for all student teaching programs; 17 of the schools had a pattern of one administrator for the elementary program and one for the secondary program. Forty-five percent of the administrators held the rank of full professor. Thirty-two of the 51 administrators held doctorates. Thirty-four earned less than $15,000 a year. Over half were in their position less than six years. Duties were many and varied, and only at the larger institutions was it a 100 percent full-time job.

The College Supervisor. A majority held at least a Master's Degree, were members of the institution's faculty, and were either

assistant professors or associate professors. Only four institutions

out of the 51 reported using graduate students as college supervisors.

Eighteen of the schools indicated that they possessed no regulation

concerning the minimum number of years of experience needed to qualify

as a college supervisor. Average student teaching loads for full-time

college supervisors ranged from eight student teachers to 35. Part-

time supervisors averaged between four and 12 student teachers. Only a

very few institutions reported the practice of using the same college

supervisor to supervise both elementary and secondary student teachers.

The Cooperating Teacher. Most of the schools require at least

a Bachelor's Degree to qualify as a cooperating teacher. While many of

the institutions indicated that a Master's Degree was preferred, not

one school in the state had this as a requirement. Thirteen of the

institutions reported that only a teaching certificate was required.

A minimum of two years teaching experience was accepted by nine of the

institutions as a qualification for a cooperating teacher. The majority,

however, recommended three years experience. The most commonly used

term was cooperating teacher. Only six institutions reported using

the term, supervising.teacher. Compensation ranged from $25.00 to

$100.00. Only four institutions indicated that they did not pay their

cooperating teachers anything. Eighteen of the schools paid cooperating

teachers $50.00 or less. The most common fringe benefit provided was a

banquet and/or in-service educational conference or workshop. Forty-one

of the institutions indicated that they provided cooperating teachers

with a student teaching guidebook.

The Student Teacher. The approximate number of persons student

teaching in elementary during the 1968-69 school year ranged from 10 to over 600. A 2.0 or C average was the common measuring stick for eligibility to elementary student teaching. Observation and participation in education courses was the most prevalent type of pre-student teaching laboratory experience provided. Two methods courses--reading and mathematics--were cited by a majority of the schools as required courses prior to student teaching. Weekly seminars or practicum classes and the keeping of a daily log or diary were found to be relatively common practices along with the student teaching experience. The cooperating teacher was cited most often as the major concern of student teaching administrators.

Organization of Programs. The most striking fact uncovered by the study about the organizational structure of elementary student teaching was the total lack of uniformity in the various programs. Some of the patterns that did emerge, however, included the following: (1) The campus laboratory school is being discontinued- especially as a student teaching center for prospective elementary teachers; only 27 percent of the institutions reported using these schools for that purpose. (2) Laboratory schools are being used more for experimentation and curriculum development rather than for student teaching. (3) The off-campus student teaching center is the most prevalent type of program, and it is a full-time assignment for student teachers. (4) Many schools are attempting to give elementary student teachers experiences at both the primary and intermediate grade levels. (5) Only six institutions reported sometimes placing two student teachers at one time with one cooperating teacher. (6) Forty-six of the institutions indicated the elementary student teaching was reserved for the senior year, while four made the

experience optional for either the junior or senior year. One institution
in the state provided two student teaching experiences--one in the junior
year and one in the senior year. (7) Although 30 of the institutions
placed their student teachers no further than 25 miles from the main
campus, some schools placed their student teachers as much as 100 miles
from campus. (8) Twenty-four of the institutions indicated that the
responsibility for the final grade or evaluation of the student teaching
experience was shared by the college supervisor and cooperating teacher.
(9) Thirty-seven of the institutions reported using the A, B, C, grading
system for elementary student teaching; 10 other schools utilized a
pass-fail system.

Subjective Data. Of the 36 directors interviewed, 88 percent
felt that their programs incorporated certain components that could be
profitably adopted by other institutions. Some of the more innovative
changes reported included more and earlier pre-student teaching labora-
tory experiences; the addition of resident college supervisor centers;
the adoption of a "professional" semester; greater use of micro-teaching
and video-taping; and the addition of an internship program.

The follow-up program of elementary teacher graduates as reported
by the interviewees was noticeably weak. About 24 out of the 36 directors
interviewed reported programs of one degree or another for preparing
elementary teachers for inner city schools. However, only one director
felt that his elementary student teaching program was attempting to
cope with the problem of preparing teachers for rural Appalachia. The
two most pressing concerns reported by the directors were lack of adequate
staff-professional and clerical--and finding "good cooperating teachers.

The most popular type of an elementary student teaching experience was found to be the self-contained classroom. Only one of the 36 directors interviewed did not make use of self-contained classrooms. Departmentalization, team teaching, non-graded, and I. P. I. situations followed in that order.

Conclusions

1. The findings of this study concur with the findings of studies conducted in other states which reported a wide diversity of practices and policies in the operation of student teaching programs.

2. Of the 45 components of the writer's "model program," 31 of the criteria (almost 70 percent) were met by over half of the institutions in the state. This fact is coupled with the finding that elementary student teaching programs in the state underwent many changes in the last five years and further modifications are planned. These data lend support to the conclusion that the state's elementary student teaching programs were basically sound and developing.

3. The wide diversity of practices, the seemingly fierce competition for adequate cooperating schools, the struggle for sufficient professional and clerical staff, and the lack of uniformity among programs seems to suggest the necessity for more supervision and direction from the State Department of Education.

4. The data seems to suggest that greater financial assistance from the state and federal government is needed if elementary student teaching programs in Pennsylvania are to continue to expand and improve.

Recommendations

Based on the comparison of existing practices and policies with

the "model" program developed by the writer, the following recommendations are made:

1. More systematic and adequate follow-up programs of elementary teacher graduates should be initiated.

2. A systematic attempt should be made to prepare elementary teachers for rural Appalachia.

3. Basic requirements for cooperating teachers should be up-graded and strengthened.

4. Supervision of elementary student teachers by the colleges should either be tightened and improved or the responsibility turned over to the cooperating schools.

5. Adequate staff--both professional and clerical--should be provited by institutions to implement the elementary student teaching programs.

6. A more uniform policy of remuneration of cooperating teachers should be adopted throughout the state. While only four institutions in the state did not provide some kind of remuneration for this service, there were 18 institutions out of the 51 involved in the study that provided compensation of $50.00 or less.

THE INFLUENCE OF THE CLASSROOM VERBAL
BEHAVIOR OF COOPERATING TEACHERS
UPON THE VERBAL BEHAVIOR OF SELECTED
INTERMEDIATE GRADE STUDENT TEACHERS

by Lester J. Bowers*

The Problem

This study was designed to determine the influence of cooperating teachers on the verbal behavior of student teachers. The purpose was two-fold: (1) to determine the direction of change in specified categories of a student teacher's verbal behavior during the student teaching period, and (2) to study the relationship of changes in a student teacher's verbal behavior to the verbal behavior of the cooperating teacher.

It is hypothesized that the verbal behavior of the cooperating teacher does influence the verbal behavior of the student teacher and as a result of this influence, the verbal behavior of the student teacher more nearly approximates that of the cooperating teacher at the end of the student teaching assignment than at the beginning.

Scope

The study was conducted at East Stroudsburg State College during the spring semester of the 1967-68 school year. Twenty student teachers scheduled to teach in an intermediate grade and the twenty cooperating teachers to whom they were assigned were included in the study.

Regular procedures for assigning student teachers to cooperating teachers were followed in all cases. That is, other than a request by the student to have an opportunity to do part of the teaching in an

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*An abstract of a dissertation submitted in partial fulfillment of the requirements for the Doctor of Education degree in the Graduate School, Temple University, June 1970.

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intermediate grade, no effort was made to match student teachers with
cooperating teachers.

General Design of the Study

In order to obtain data concerning the hypothesis of the study,
all participants were observed under the following conditions:

(1) Each of the twenty student teachers was observed while teaching
a social studies lesson for one teaching session twenty to thirty minutes
in length. This observation occurred during the first week of the semes-
ter. The student teachers were observed before witnessing any teaching
of social studies by the cooperating teachers.

(2) Each of the twenty cooperating teachers was observed for a
teaching session twenty to thirty minutes in length. A social studies
lesson was planned for the same children and scheduled at about the same
time of day as that of the earlier lesson taught by the student teacher.
The observation of the cooperating teacher was made during the fourth and
fifth weeks of the semester.

(3) Each of the twenty student teachers was again observed while
teaching a similar lesson and under conditions as much like those of the
earlier lesson as possible (i.e. with the same pupils and about the same
time). This observation occurred during the last week of the student
teaching experience with that particular cooperating teacher.

(4) Observers of the lessons taught by all the subjects used a
modified version of the Flanders' System of Interaction Analysis (see
Table 1 & 2, pp 22,23) This instrument consists of ten categories with
modifications in categories 3, 5, and 10 which describe the verbal inter-
action between teacher and pupils. Use of this system allows for teacher

and pupil statements, silence and noise to be categorized and analyzed.

(5) The results of each observation were placed in matrices and
a total matrix was prepared for each participant. Classroom interaction
verbal behaviors of student teachers and cooperating teachers were
analyzed using two procedures, one descriptive, the other statistical.

Analysis of Data

Within the limits of the study, the student teaching experience
did not bring a consistent change in all, or even most, categories of
verbal behavior.

The results of the first observation of student teachers showed a
rather typical verbal pattern of: (1) asking a question (2) pupil initi-
ating a response (3) student teacher at times repeating the pupil's
response (4) praising or criticizing the response (5) contributing a few
more facts, and (6) asking another question. It was not unusual for
periods of slience to occur following the asking of the question or
immediately after the pupil began to respond.

The verbal behavior of cooperating teachers, although much like
that of the student teachers, did show some differences. Cooperating
teachers made more use of category 5s, structuring (structuring occurs
when the teacher is preparing the class for the lesson or is designing
future class activities). Cooperating teachers also spent more class
time extending the responses made by the children, that is, they developed
the pupils' ideas without changing the specific idea. As a result of
these differences, the typical cooperating teacher's verbal behavior
pattern was: (1) structuring the lesson (2) asking a question
(3) pupil initiates the response (however, cooperating teachers were
more prone to call on a pupil than were the student teachers),

(4) repeating the response given by the pupil (5) extending the response without changing the idea (6) structuring the class for the next question, and (7) asking another question. Cooperating teachers were less inclined than student teachers to use either praise or criticism following the pupil's response. Cooperating teachers also kept the class moving at a faster pace which resulted in less time being consumed by periods of silence (category 10s).

Generally, the verbal behavior most frequently used by both student teachers and cooperating teachers was that of asking questions (category 4). Of the classroom talk done by pupils, the largest percentage was in the form of making voluntary statements or asking voluntary questions. A lesser amount of pupil talk was in direct response to questions asked by student teachers and cooperating teachers. The verbal behaviors most frequently used by the cooperating teachers were repeating, structuring, and directing. Cooperating teachers seemed to talk more and the pupils less. Student teachers tended to make more use of praise, to criticize less and were able to stimulate pupils to respond voluntarily to a greater degree than were the cooperating teachers (see Table 3 Page 24)

In order to determine whether or not a significant difference existed between the student teachers' verbal behavior in the beginning of the student teaching experience and the end of that experience, the mean frequencies of verbal assertions by categories were compared for the two observations. The difference method was used in calculating the significance of the difference between means. The .05 level was the significance level chosen to determine whether the differences were to be attributed to chance.

An inspection of the statistical data in Table 4 shows the differ-
ence between mean frequencies for category 4 (questioning), category 3e
(expanding), and category 10s (silence) were significant. It was concluded
that there was a difference between the student teacher's verbal behavior
in the first observation and the second observation in these categories.
The "t" ratios of the other categories indicated that these differences
between the means were not greater than expected due to chance variations.

To determine whether or not the verbal behavior of student teachers
was becoming more like that of the cooperating teachers, comparisons were
made of the results of the first student teacher observation with the
observation of the cooperating observation and also the results of the
second student teacher observation with the observation of the cooperating
teacher. A "t" test was computed for the following modified Flanders'
categories; category 2 (praise), category 3r (repeat pupil response),
category 3e (expand pupil ideas), category 4 (ask questions), category 5f
(lecture-facts), category 5s (lecture-structure) category 6 (give directions),
category 7 (criticize or justify authority), category 8 (pupil talk-response),
category 9 (pupil talk-initiated), and category 10s (silence).

A study of Table 5 shows the following results of this analysis:
(1) an apparent change in the verbal behavior of student teachers toward
the hypothesized direction in category 3e (expanding) (2) a change in
student teacher verbal behavior in category 2 (praise and 10s (silence)
that suggests an influence by the cooperating teachers' verbal behavior
(3) in categories 3r (repeating), 5s (lecture-structuring), and 6 (giving
directions), the student teachers' verbal behavior appears to be moving
in a direction opposite to that of the cooperating teacher and no apparent
influence can be reported.

The following are the summarized findings that resulted from the analysis of the data:

1. Though the verbal behavior of the student teachers did change during the student teaching experience, the same kinds of verbal change did not take place among all student teachers (Table 6 Page 27)

2. Though the verbal behavior changes were not pronounced, more than half of the student teachers' verbal behaviors became like their cooperating teachers during the eight-week period (Table 7 Page 28)

3. As student teachers gained teaching experience, they spent considerably more class time extending the responses of children, the only verbal behavior which showed a consistent change.

4. Contrary to the patterns of verbal behavior demonstrated by cooperating teachers, student teachers made less use of the verbal behaviors (a) of repeating pupils' responses, and (b) of structuring or preparing the children for the lesson.

Recommendations and Discussion

Although questions of why the evidence of cooperating teacher influence may not have been more clear-cut are important, the results of this study do replicate earlier findings even though not as clearly as might be wished.

If learning is defined as "change in behavior," it would seem that in verbal behavior little was learned by the student teachers. This is not to say the student teaching experience does not result in other learnings. No attempt was made in this study, however, to identify behaviors other than verbal.

A basic assumption underlying the hypothesis of this study is

that broad, verbal patterns of student teachers and cooperating teachers
are characteristic of their normal behavior and tend to recur when cir-
cumstances are sufficiently similar. While this assumption is supported
by earlier studies, the question arises whether the verbal behavior ob-
served in an introductory-type social studies lesson is characteristic
of a teacher's normal verbal behavior. Would additional observations of
various types of social studies lessons have produced different behaviors
from those reported? In any case, more observations of the cooperating
teachers as well as a post-student teaching observation of the student
teacher (perhaps during the first year of teaching), should be considered
in any future investigation of this type.

Still another question that seemed worth examining was whether the
subjects used in the study were different in their verbal behavior, were
they unique. To examine this possibility, the student teachers' means
of the Flanders' categories from this study were compared with the same
measures taken from Wieder's study (Lehigh University, 1967). Wieder's
study was selected for comparison because he examined the verbal inter-
action of student teachers using the same modified form of the Flanders'
system used in this study. Generally, a few differences did exist but
over-all, it seems fair to conclude the student teachers' verbal behavior
is similar to that used by the subjects in Wieder's study.

It seems to the writer that those student teachers who experienced
the greatest verbal change had some difficulty with classroom discipline
at the beginning of their student teaching experience. It also appears
that student teachers assigned to cooperating teachers with well-established,
prescribed classroom procedures and methods, adapted themselves to those

procedures and were more influenced by the verbal behaviors of their co-operating teachers. Perhaps these observations indicate a necessity to look more closely at personality factors as the research design of this study did not precisely isolate other variables such as the contributions of children or the personality differences of student teachers and cooperating teachers.

It was found that student teachers and cooperating teachers made more use of category 4, asking questions, than any other. All questions are recorded in category 4 in the Flanders' system whether the question required a simple, one-word response or reflective thinking on the part of the pupils. A refinement of this category would be helpful in identifying the kinds of questions being asked. Relationships between the types of questions asked and the increase and decrease in pupil response would be an interesting subject for future investigation.

It is hoped that further research will develop reliable and valid objective measures of teacher performance. Continued refinement is needed of systems and schedules which are more fully descriptive of classroom observations and which include information regarding teacher personality and its effects on the learner. Systems need to be devised that reduce the judgmental factor even more than does the Flanders' system.

The most disappointing and yet encouraging outcome of this study concerned the results that indicate the student teacher does not emulate the cooperating teacher, at least in the frequency of use of various categories of verbal assertions used in the classroom.

While this study had no intention of investigating the value of student teaching per se as the culminating phase of the pre-service

preparation of teachers, the findings raise some question regarding the full-semester, single cooperating teacher assignment for <u>all</u> student teachers. Are some student teachers aided by this experience while others become bored and even disillusioned? If so, what are these differences in students and how can they be identified earlier?

It is the writer's opinion that the practice of student teaching should be discontinued if it is regarded only as a process of familiarizing the aspiring teacher with details of classroom management and procedure. The impact on the student teacher of the cooperating teacher, the children, the college supervisor, (indeed all the factors which comprise the classroom environment), should be targets for future study and investigation.

TABLE 1

CATEGORIES FOR INTERACTION ANALYSIS*

TEACHER TALK	INDIRECT INFLU- ENCE	1. ACCEPTS FEELING: accepts and clarifies the feeling tone of the pupils in a non-threatening manner. Predicting and recalling feelings are included.
		2. PRAISES OR ENCOURAGES: praises or encourages pupil action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying "go on" are included.
		3. ACCEPTS OR USES IDEAS OF PUPIL: clarifying or developing ideas or suggestions by a pupil.
		4. ASKS QUESTIONS: asking a question about content or procedure with the intent that a pupil answer.
	DIRECT INFLU- ENCE	5. LECTURING: giving facts or opinions about content or procedure; expressing his own idea; asking rhetorical questions.
		6. GIVING DIRECTIONS: directions, commands, or orders with which a pupil is expected to comply.
		7. CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change pupil behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
STUDENT TALK		8. STUDENT TALK RESPONSE: talk by students in response to teacher. Teacher initiates the contact or solicits pupil statement.
		9. STUDENT TALK INITIATION: talk by pupils which they initiate. If "calling on" pupil is only to indicate who may talk next, observer must decide whether pupil wanted to talk. If he did, use this category.
		10. SILENCE OR CONFUSION: pauses, short periods of silence, and periods of confusion in which communication cannot be understood.

*Taken from Amidon, E. J. and Flanders, N.A. The Role of the Teacher in the Classroom (Minn: Paul S. Amidon & Associates, Inc., 1963), p. 12.

TABLE 2

REFINEMENT OF CATEGORIES FOR INTERACTION ANALYSIS*

3e. EXPANDING: develops the ideas of the pupil further than the pupil did but still deals with the specific ideas of the pupil. Answers a question asked by a pupil. Helps pupil clarify ideas, sometimes by use of questions growing out of a statement made by a pupil.

3r. REPEATING: repeats the exact words of the pupil or writes them on the blackboard. Paraphrases what the pupil has said. Refers back to something that a pupil said earlier in the discussion.

5f. FACT: stating a fact about content.

5o. OPINION: giving opinion concerning anything being discussed. Interpreting what a book or poem means. Making a subjective-value judgment.

5s. STRUCTURING: suggesting ways of doing something or designing future class activities. Using own ideas for an outline written on the blackboard. Stating intensions or purposes for activities. If suggestion is strong enough to be interpreted as a direction that must be followed, category six is used. Introductory remarks leading up to a question or planned activity, but not dealing directly with factual content of the lesson.

10s. SILENCE: Complete lack of speaking, writing, or noise, denoting thinking or waiting attentively.

10n. NOISE: noise or confusion caused by many pupils talking at the same time, denoting lack of attention or interest in what the teacher is doing. Lack of organization, or activity with no definite constructive purpose.

10c. CHANGE OF PUPIL TALK: used to show that a different student is talking when no teacher talk intervenes.

10w. WORK: silence with student doing something constructive such as reading, writing, or having their hands raised in order to answer a question. Writing on the blackboard by many pupils at the same time. A single pupil writing on the blackboard would be category eight or nine.

*Examples of these refinements can be found in Appendix B of the study.

TABLE 3

PERCENT OF TOTAL TALLIES IN EACH
CATEGORY FOR ALL OBSERVATIONS*

Category	St. Tchrs.' 1st Obs.	Coop Tchrs.' Obs.	St. Tchrs.' 2nd Obs.
1. (accepts feelings)	.00	.09	.03
2. (praises)	8.37	7.07	7.67
3r (repeats responses)	2.99	3.90	2.54
3e (expands responses)	3.08	6.01	6.98
4 (asks questions)	27.23	26.38	29.21
5f (states facts)	9.11	8.54	7.14
5o (states opinions)	.23	.51	.46
5s (structures)	5.15	7.14	3.86
6 (gives directions)	1.36	2.18	1.59
7 (criticizes)	2.63	1.79	2.46
8 (pupil answers)	6.34	8.06	5.80
9 (pupil statements)	27.95	25.19	27.99
10s (silence)	4.08	1.57	2.42
10n (noise)	.47	.24	.60
10w (work)	.46	.63	.62
10c (change of pupil)	.54	.70	.62
Total	99.99	100.00	99.99

*For comparison of these percentages with those found in Wieder's study
see Table 8, Chapter 5 of the study.

TABLE 4

DIFFERENCES BETWEEN MEAN FREQUENCIES OF CATEGORIES*
OF VERBAL ASSERTIONS FOR STUDENT TEACHERS, FIRST
AND SECOND OBSERVATIONS
N = 20

	Category	M_D	"t"
2	Praise or Encourage	-.008	-1.32
3_r	Repeat	-.005	-1.03
3_e	Expand	.042	7.47***
4	Ask Questions	.034	1.97**
5_f	Lecture: facts	.019	1.02
5_s	Lecture: structure	.014	1.69
6	Give Directions	-.002	-0.50
7	Criticize	-.001	-0.21
8	Student Talk: response	-.006	-0.60
9	Student Talk: initiation	.001	0.07
10_s	Silence	-.016	-2.55***

* Categories #1, #5, #10n, #10w, and #10c were not included in data as the use of these categories was limited.

** Significant at the .05 level.

*** Significant at the .01 level.

TABLE 5

THE "t" TEST APPLIED TO THE MEANS OF THE PROPORTION
OF USE IN EACH CATEGORY* OF THE
MODIFIED FLANDERS' SYSTEM

Category	Student Teacher First Obs.	Cooperating Teacher	Computed "t" value	Student Teacher Second Obs.	Cooperating Teacher	Computed "t" value
2	.083	.070	1.688	.078	.070	.96
3r	.026	.038	-1.905	.025	.038	-2.41**
3e	.030	.060	-2.885**	.069	.060	.87
4	.272	.263	.427	.292	.263	1.47
5f	.090	.085	.167	.071	.085	- .66
5s	.051	.071	-1.835	.038	.071	-3.33**
6	.018	.021	- .682	.015	.021	-1.94
7	.026	.017	2.05**	.024	.017	2.26**
8	.062	.080	-1.22	.057	.080	-1.95
9	.279	.251	.91	.279	.251	.97
10s	.040	.015	3.57**	.024	.015	2.05**

N_1 = 20 (student teachers)

N_2 = 20 (cooperating teachers)

** Significant at the .05 level

*Category #1 (accepting pupil feelings, #5 (giving opinions), #10n (pupil noise), #10w (pupil work), and #10c (change in pupil talking), were not included in the data as the use of these categories was limited.

TABLE 6

COMPARISON OF ALL CATEGORIES* FOR
DIRECTION OF CHANGE IN STUDENT
TEACHERS' VERBAL BEHAVIOR

| | | Percent of Use | | | |
	Category	Positive Change (+)	Negative Change (-)	No Change	No Influence
#2	(accepts feelings)	11	5	3	1
#3r	(repeats responses)	13	0	3	4
#3e	(expands responses)	12	3	3	2
#4	(asks questions)	14	4	1	1
#5f	(states facts)	15	3	1	1
#5s	(structures)	12	5	3	0
#6	(gives directions)	13	1	3	3
#7	(criticizes)	12	2	4	2
#8	(pupil answers)	13	6	1	0
#9	(pupil statements)	12	6	0	2
#10s	(silence)	14	1	5	0
				N=20	

*Categories *1, #5o, #10n, and #10c were not included as the use of these categories was limited.

TABLE 7

NUMBER OF INDIVIDUAL STUDENT TEACHER
CHANGES IN ALL CATEGORIES

Student Teacher	Positive Change (+)	Negative Change (-)	Same
1	8	1	2
2	6	2	3
3	9	0	2
4	8	1	2
5	9	1	1
6	4	4	3
7	2	6	3
8	7	1	3
9	7	3	1
10	7	2	2
11	8	0	3
12	7	2	2
13	6	1	4
14	7	3	1
15	8	2	1
16	8	3	0
17	9	1	1
18	7	0	4
19	7	0	4
20	7	3	1

$N = 11$

STUDENT TEACHER CHANGES IN BELIEFS AND
PRACTICES RELATED TO TEACHING
ELEMENTARY SCHOOL SCIENCE

By Robert L. King *

Science educators agree that the objectives of science teaching
as they appear in educational literature have changed little in the past
twenty-five years. They insist that science teaching should reflect the
nature of science, and it should harmonize with the scientific point of
view.

Many of the criticisms directed toward the objectives of science
teaching are actually censures of classroom procedures. Current teach-
ing strategies often point toward doubtful objectives; for example,
objectives which demand too many facts, too little conceptualization,
too much memorizing, and too little thinking. College instructors have
noted these inadequacies, and are concerned about them. Because of this
concern, they have conducted research studies which seek to measure the
influence of professional methods courses upon science teaching practices
in the classroom.

Although the actual competencies of any teacher develop over a
period of years, it is the author's opinion that the teacher's own
appraisal of his assets and limitations to a large degree determine his
teaching behavior. Thus, a student may come to the professional methods
course with preconceived ideas of teaching methods which he has experi-
enced as a pupil in the public schools. Teacher education programs for
the preparation of elementary school teachers generally include profes-
sional methods courses, directed observations of actual classroom

*Unpublished Doctoral Dissertation, The Pennsylvania State
University, 1970.

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situations, student teaching, and other teacher related experiences.
These courses are intended to orient the prospective teacher to the work
he will be doing. Whether professional courses are taken seriously by
the prospective teacher, or whether students secure their teaching beliefs
from other sources is of continuous concern to instructors of these pro-
fessional courses.

The use of off-campus student teaching facilities for teacher
preparation has now become a cooperative enterprise involving public
schools and teacher education institutions. With greater responsibility
for the training of teachers being assumed by the public schools, two
important sources of information about teaching methods are open to
students: (1) the point of view inherent in the professional methods
course, and (2) the teaching strategies used by the classroom teacher who
supervises the student teacher. The use of public school facilities
raises two important questions for teacher educators: (1) are there
differences of opinion between methods course instructors and supervising
teachers about the methods used in the classroom, and (2) does the student
teacher's teaching practices reflect the point of view of the supervising
teacher or that of the college instructor? If differences do exist in
the patterns of conformity, college instructors and supervising teachers
should be aware of the nature and the extent of these differences.

Need for the Study

This study was conceived with the purpose of evaluating common
science teaching strategies which are likely to be used by elementary
education undergraduates in the student teaching program. The outcomes

of the study will contribute to a fund of information needed by those

responsible for the direction and development of teacher education

programs in elementary school science.

Michaelis (1962), in reviewing needed research, suggested that

studies are needed to show the interactive process between student

teachers and cooperating teachers. Young (1961) also reviewed the

results of many years of research in the field of student teaching and

concluded that few evaluative studies were available.

Lindsey (1954), writing in the Seventh Yearbook of the American

Association of Colleges for Teacher Education, was quite specific in

her observations and recommendations regarding the effectiveness of

student teaching programs.

> It would seem appropriate now to attempt some
> examination of the effects of identified laboratory
> experiences in the growth of the student. Such a study
> might proceed from the statement of a specific purpose
> in a specific laboratory experience to the securing of
> evidence on the degree to which the purpose was achieved
> by the student. Such examination might also be made
> through status studies of student behavior before and
> after a given laboratory experience, or studies of
> students' verbalized concepts before and after a
> specific experience (p. 132).

Ryans (1963), more recently stated essentially the same propo-

sition:

> Also needed is research on the influence of different
> kinds of teacher education programs, of different education
> course content, or variations in practice teaching, and
> various other educational experiences concerned with the
> developing patterns of teacher characteristics (p. 109).

Victor and Lerner (1967) pointed out that there is almost unani-

mous agreement on the need for research pertaining to teacher training

in science education. Hines (1966), in a study conducted at the

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University of Oklahoma, attempted to identify factors which affect the
opinions and teaching behaviors of elementary school teachers in the
teaching of science, suggested that more research is needed before
conclusive statements can be made concerning the acquisition of science
teaching concepts and classroom behavior.

Terwillinger (1967), suggested that classroom observation of actual
teaching behavior is needed to determine whether the stated beliefs of
student teachers are put into actual practice.

The writer's study is therefore directed to provide science
teacher educators with answers to two questions: (1) What is the
nature and the source of beliefs about science teaching, and (2) how do
these beliefs relate to the classroom teaching practices of student
teachers? If the investigator finds substantial differences of opinion
concerning science teaching practices between the college instructor
and the supervising teacher, perhaps educators can take steps to bring
about these two positions more closely together. Agreement about
science teaching practices between the college instructor and the
supervising teacher will lessen the possibility of confusion for the
student teacher.

Nichols (1963) stated that:

> The college should plan with the cooperating schools
> and teachers, activities and experiences which lead to the
> improvement of attitudes and the selection of desirable
> teaching practices. It should be assured by the college
> that the practice teaching experience is coordinated with
> professional courses and is a continuation of such courses
> rather than an isolated group of experiences (p. 1089).

The results of this study should provide information about the
source of the student teacher's methods of teaching. Is he influenced

more by his supervising teacher or by his college instructor? Are his
actual classroom teaching practices consistent with his point of view?

The Hypotheses

Hypothesis 1.

There is no change in conformity between a university
professor's beliefs about science teaching practices and those
held by students before student teaching and after student
teaching.

Hypothesis 2.

There is no change in conformity between a supervising
teacher's beliefs about science teaching practices and those
held by students before student teaching and after student
teaching.

Hypothesis 3.

There is no difference between student teachers' use of
science teaching strategies and the expression of beliefs about
these strategies made by (a) university professors and by (b)
supervising teachers.

Hypothesis 4.

There is no difference between student teachers' use of
science teaching strategies and the expression of beliefs about
these strategies (a) before student teaching and (b) after
student teaching.

PROCEDURES

The purpose of this investigation was to study any differences in
student teachers' beliefs about science teaching which might occur, and
the direction that such differences might take. Through the use of
systematic observation the investigator tried to determine whether or
not the student teacher's classroom teaching performance was consistent
with his expressed point of view as measured by his arrangement of
science teaching practices listed on the cards of a Q-Sort Deck. The
population for the study consisted of twenty elementary education
majors at Indiana University of Pennsylvania. These students had been
assigned to the Indiana Area School District student teaching center
during the 1969 fall semester. The student teaching assignment
followed the regular university procedures; the participating students
were chosen without reference to any knows traits or characteristics
which would affect the study. Stephenson's Q-technique (Stephenson,
1953) was selected as a means of collecting the desired data for one
phrase of the study.

The investigator used a Classroom Observation Record (CORES) con-
sisting of items from the Q-Sort Deck designed to measure the frequency
of use of science teaching practices. This procedure revealed whether
or not the student teacher's classroom teaching performance was con-
sistent with his expressed point of view as measured by his arrangement
of science teaching practices listed on the Q-Sort Deck.

The investigator developed a Q-Sort Deck of 65 science teaching
practices which could be used to identify a teacher's concept of
teaching science. The Stephenson Q-technique employs a forced-choice

method which compels the individual to place in rank order a list of
teaching practices. The investigator used seven categories, dis-
tributing the items so that the distribution approximated the normal
curve. The investigator then assigned each of the categories a scaled
score of one to seven with the "most acceptable" receiving the higher
score and the "least acceptable" receiving the lowest. Ranking in the
intermediate categories were assigned scores relative to their position
between the extreme ratings.

The supervising teacher made an observation of each science
lesson taught by the student teacher using the CORES instrument. The
investigator then evaluated the data gathered from these classroom
observations and assigned to each item a value of one to seven
depending upon the frequency of occurrence. Thus, a teaching practice
which was used most frequently received a scaled score of seven, while
those teaching practices which were used less frequently received
lower values commensurate with the frequency of their use. The teach-
ing practices which were not observed during the student teaching
experience were assigned the mean of remaining score values.

The university instructors who had taught science methods to the
students sorted the cards in the Q-Sort Deck. The supervising teacher
assigned to work with each student sorted the Q-Sort Deck. Each
student sorted the cards prior to student teaching and again at the
conclusion of his student teaching experience. The investigator
recorded the item ratings for further study and evaluation.

Nature and Analysis of the Data

The data collected in this study consisted of the (1) university instructor's sort of the science teaching practices listed in the Q-Sort Deck, (2) the supervising teacher's sort of the science teaching practices, (3) the student teacher's pre-student teaching sort of the science teaching practices, (4) the student teacher's post-student teaching sort of the science teaching practices, and (5) the data revealing the student teacher's actual science teaching performance as measured by the Classroom Observation Record.

The Q-Sort technique employed in this study required the sorter to place a specified number of cards in each of seven piles which forced the cards into a normal distribution. Each item was assigned a scaled score from a low of "one" to a high of "seven." A scaled score of 1, 2, or 3, indicated low acceptance of an item, however, low acceptance of an item did not suggest that the sorter believed the teaching practice had no classroom value. A scaled score of 5, 6, or 7 indicated a high acceptance of an item. Items which received a scaled score of 4 indicated that the sorter had no strong disposition to upgrade or to downgrade that particular science teaching practice.

The CORES, composed of the items appearing in the Q-Sort Deck, was used to record the science teaching practices employed by the student teacher. A record was made of each science lesson taught by the student teacher. At the conclusion of the student teaching experience, the investigator collected the data from the classroom observation record.

The investigator used the Pearson Product-Moment Correlation technique to find the amount of agreement, or similarity of point of view, between the university instructors, the supervising teachers, and the student teachers on the evaluation and use of science teaching methods. These correlation coefficients were then converted to Fisher z scores and t tests were computed to test for differences in the responses between the groups (Blommers and Lindquist, 1960). The t tests were applied to find differences in the ratings, (1) between the university professor and the student teacher before and after the student teaching experience; (2) between the supervising teacher and the student teacher before and after the student teaching experience; (3) between the university professor and the student teacher's classroom performance; and (4) between the student teacher's pre-student teaching sorting and his classroom performance and the student's post-student teaching sorting and his classroom performance. A fiducial level of .05 was accepted as the significance level appropriate to this study.

The data were then examined to find specific items on which disagreement or agreement occurred. These items were then classified according to the nature of the teaching strategy and the direction of concurrence.

Interpretation of Data

The t value was significant when the conformity of students' beliefs to those of the professor was measured. The students showed less conformity with the university instructor after student teaching than before student teaching. Therefore, hypothesis 1 was rejected.

The t value was not significant when the conformity of student beliefs with those of the supervising teacher was measured, and hypothesis 2 was not rejected. There was no evidence of shift in conformity of student teachers with supervising teachers.

The t value was not significant when the relationship of the university instructors' beliefs and the supervising teachers' beliefs were compared with the students' teaching strategies in the classroom. There appeared, however, to be a slight shift from the point of view of the university instructor toward that of the supervising teacher. This shift was not significant, and hypothesis 3 was not rejected.

The t value was significant when the student teacher's use of science teaching strategies was measured against his expressed beliefs about science teaching. Thus, his use of science teaching strategies was more like his expression of beliefs after student teaching than before student teaching. Therefore, hypothesis 4 was rejected.

Conclusions

1. Some evidence appeared which would suggest that students move significantly away from the professors' point of view after student teaching.

2. There was no significant change of ideas of student teachers toward those of supervising teachers.

3. There was no significant difference between the teaching strategies used by the student teacher and the expression of beliefs about science teaching strategies by instructors and supervising teachers.

4. The student teachers' use of science teaching practices is more like their expression of beliefs about these practices after student teaching than a comparable expression of beliefs before student teaching.

5. Specific placement by the participants of individual items on the Q-Sort revealed in considerable detail the differences in point of view as these differences developed in the study. At least half of the 65 items on the Q-Sort Deck show shifting points of view as the subjects appear to be responding to the various treatments used in this study.

A DETERMINATION OF THE PRACTICALITY OF MAKING THE USE
OF AN INFORMAL READING INVENTORY MORE APPLICABLE
TO THE NEEDS OF THE CLASSROOM TEACHERS
By Catherine Blynn*

INTRODUCTION

To provide adequate instruction in reading the teacher must know
the instructional reading level of each child and must have more informa-
tion about the child's reading performance than numerical test scores
reveal. Evaluation must be more than a measure of specific skills or
knowledge. It should include analysis of (1) the student's reading
behaviors and performance in relation to instructional objectives,
(2) the interaction of these behaviors and (3) the traits of the learner
and the learning conditions. With these samples of behavior, formal and
informal, the teacher would be better prepared to evaluate pupil progress,
identify areas where help is needed, plan appropriate subsequent instruc-
tion and objectively examine his or her own functioning as the instruc-
tor. Standardized group tests, when used as a device to measure reading
performance, provide little information about the reader and at the
minimum, usually overestimate reading levels by at least one grade
level.

The Informal Reading Inventory (IRI) is recognized by Betts
(1950), Johnson and Kress (1965), McCracken (1967), Kender (1968), and
others as a measuring device which does provide the examiner with
opportunities to assess not only strengths and weaknesses in reading
performance but behavior of the reader. Although the IRI appears to

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*Review of study completed for doctoral dissertation Doctor of
Education degree awarded October 11, 1970, Lehigh University.

yield the most information per minute of testing time (Otto and McMenemy, 1966), the IRI must be administered individually; therefore, the practicality of this instrument is limited. Since it is customary for only expereinced reading teachers to administer an IRI the possibility of utilizing the results of this type evaluation is directly proportional to the availability of trained personnel.

In an attempt to reduce existing limitations of time and personnel which presently prevent the IRI from being utilized as a measuring device to ascertain accurate reading levels by the classroom teacher, two problems needed to be investigated. It was necessary to determine (1) if classroom teachers can be trained through in-service programs to accurately ascertain the instructional reading levels of children and (2) if an abbreviated form of an IRI would yield sufficient information to permit determination of the instructional reading levels of children.

To meet the objectives of this study the following null hypotheses were tested,

> 1. There is no significant difference in the instructional reaing levels obtained by clinicians as compared to the instructional reading levels obtained by teachers (who have minimal inservice training) when an unabbreviated IRI is administered.

> 2. There is no significant difference in the instructional reading levels obtained by clinicians through the administration of an unabbreviated form of an IRI as compared to the instructional reading levels obtained by clinicians through the administration of an abbreviated form of an IRI.

Method

The examiners consisted of three teachers who were chosen at random from the forty-two faculty members of the Catasauqua Area School District and of three clinicians who were chosen either from students in

the doctoral program or from instructors in reading at Lehigh University.
Results obtained by the clinicians served as criterion scores in evaluat-
ing teacher proficiency in determining insturctional reading levels.

The examinees consisted of sixty children chosen at random from
the Catasauqua Area School District, Catasauqua, Pennsylvania. Thirty
children were administered alternate forms of the informal reading
inventory by pairs of clinicians and teachers. Thirty of the remaining
sixty children were administered an abbreviated informal reading inven-
tory and an unabbreviated informal reading inventory by clinicians.

The inservice program to instruct teachers in the administration
and scoring of an informal reading inventory was completed in five hours
within a period of ten days by the investigator.

A $\underline{t}$ test was used to determine if a statistically significant
difference existed between the means of the scores obtained by
clinicians and teachers using an unabbreviated informal reading inventory.
In order to determine if clinicians performed differently in the adminis-
tration of an unabbreviated informal reading inventory and the administra-
tion of an abbreviated informal reading inventory, an analysis of variance
was made.

The principal instrument used in the study was The Standard
Reading Inventory, an informal reading inventory constructed by Robert
McCracken. Alternate Forms A and B for which a reliability of .91 had
been established for determining instructional reading levels were used
in evaluating pupil's reading performance.

The administration of the abbreviated informal reading inventory
followed procedures developed and used by the Lehigh County Public

Schools, Allentown, Pennsylvania, under the direction of Dr. William
Oswalt.

Results

Hypothesis I: A statistically significant difference was found
only between Teacher A and Clinician A.   However, differences in reader
levels between pairs of examiners existed in twenty-four out of thirty
cases.

Hypothesis II: The analysis of variance for Clinicians and for
Tests indicated that there were no significant differences for either
of the main effects at the .05 level.   However, the analysis of variance
revealed a significant interaction for Clinicians x Tests at the .05
level.   This significant interaction indicates that Clinician A did not
demonstrate the same proficiency in administering an abbreviated informal
reading inventory as Clinicians B and C.   The data does indicate, however,
that in the case of Clinician A, who obtained significantly different
findings on the two types of tests, the differences were due more to
the examiner than to the tests.

Discussion

The statistical data obtained in this study do not reflect the
significance of the findings.   From the investigation of hypothesis I
it seems apparent that:

1.   Training in the administration of the IRI should be delayed
     until a teacher has had experiences in teaching children to
     read.

2.   Success in using this instrument is primarily dependent upon
     skillful questioning.

3.   To develop skill in the art of questioning, the theoretical

background provided by preservice teacher education programs
is not adequate and should include more opportunities for
direct experiences with children.

4. The techniques of individual testing to assess a child's
reading performance need to be developed through inservice
training so that every elementary teacher, not only reading
teachers, can be more proficient as diagnosticians.

5. Since teachers in this study achieved some degree of pro-
ficiency in the use of the IRI, with extremely limited
practice as compared to the extensive practice time of
clinicians, it is logical to expect that teachers could
reach higher levels of proficiency through inservice
training.

6. There is a tendency for first grade teachers who have no
experience with upper elementary children to become overly
supportive. It is the investigator's opinion that teachers
should have experiences teaching at different grade levels.

From the investigation of hypothesis II, it seems obvious that:

1. The abbreviated procedure for administering an IRI as used
in this study and developed by Dr. William Oswalt, can be
used to adequately determine the instructional reading level
of a student.

2. Proficiency in administering the complete IRI does not
guarangee that an examiner will be equally proficient in
using the abbreviated procedure.

3. Inservice training would need to be directed specifically
to the administration of the abbreviated IRI if this pro-
cedure was to be utilized in a school reading program by
classroom teachers.

4. Inservice training in the art of questioning is as important
in administering the abbreviated as the unabbreviated IRI.

Resource Materials

The Standard Reading Inventory by Robert McCracken may be

purchased from the Pioneer Printing Company, Bellingham, Washington,

98225.

Detailed information concerning the administrative procedure

followed in the abbreviated administration of the IRI may be secured

from Dr. William Oswalt, Office of the County Superintendent of Schools,

Court House, Allentown, Pennsylvania, 18105, or from the investigator,

Dr. Catherine Blynn, Education Department, Kutztown State College,

Kutztown, Pennsylvania, 19530.

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The study submitted was completed as requirement for the degree of Doctor
of Education awarded to the investigator October 11, 1970, by Lehigh
University, Bethlehem, Pennsylvania.

NOTE: The term "Informal Reading Inventory" might be referred to as
        IRI should this material be used for publication.

THE DEVELOPMENT OF A MODEL FOR A STUDENT
PERSONNEL SERVICES PROGRAM IN A STATE COLLEGE
By Philip LeRoy Garrett

STATEMENT OF PROBLEM and/or PURPOSE OF STUDY: The public state colleges
have a real need for an improved student personnel services program con-
sisting of admissions, financial aid, counseling services, student welfare
services, social activities, and evaluation as is evidenced in the litera-
ture. Thus, the purpose of this study was to design a model which would
provide a structure for the development of an improved, usable, and work-
able student personnel services program.

The study was significant since there is a real need for the public
state colleges to provide services that truly meet the demands and needs
of their constituencies. The following pertinent literature gives a con-
struct for the need, reasons, and basis of the topic to be developed.

Blocker et al.,[1] Robinson,[2] and Hills et al.[3] present a need
for humanizing admissions procedures as a means of better communication
and public relations.

Arbuckle,[4] Mueller,[5] and Wrenn[6] address themselves to the pro-
blems of the student's initial contacts, the financial aid officer,
assessment, and the resources available.

A one-to-one contact as well as the group contact in counseling
is covered by Shertzer and Stone;[7] self-actualization and responsible
independence is supported by Patterson;[8] and Walker and Peiffer[9] treat
counseling goals.

In areas of student welfare, Bratten[10] treats suicide, and the
American College Health Association[11] deals with drugs. Further,

Campbell and Richards[12] cover social competencies, and, Greenleaf[13] treats living conditions, rights, and privileges.

Extracurricular activities are covered by Kievit,[14] Pruit,[15] and Gallo[16] on such themes as social skills and responsibilities, leadership qualities, and democratic processes.

Finally, evaluation is covered by the American Council on Education[17] and Stuit et al.;[18] evaluation critiques and survey of college methods and needs. Thus, writers have well documented the need for improved student personnel services programs.

BACKGROUND OF THE STUDY: In the past the standard operating procedure for colleges was that of IN LOCO PARENTIS, as cited in the 1913 Kentucky Supreme Court Case of Gott vs. Berea College:[19]

> College authorities stand IN LOCO PARENTIS concerning the physical
> and moral welfare and mental training of the pupils, and we are
> unable to see why to that end they may not make any rule or regula-
> tion for the government or betterment of their pupils that a parent
> could for the same purpose ...

But today the doctrine of IN LOCO PARENTIS has become one of the most challenged and discussed aspects of the student personnel services programs, both through confrontation by students and in the courts. Case in point is the California Supreme Court decision in 1967 in the case of Goldberg vs. Regents of the University of California.[20] This, according to Higher Education and National Affairs, is the leading case on the authority of colleges and universities in the matter of student discipline. And, the following is one of the court highlights from the decision of the case:[21] "For constitutional purposes, the better approach ... recognizes that state universities should no longer stand IN LOCO PARENTIS in relation to their students."

Thus, colleges and universities today are forgetting about their being substitute parents and are concentrating more on the educational aspects of IN LOCO PARENTIS. As a result, educational and student personnel philosophies are applied to all students whether or not they are minors or adults, males or females, residents or commuters.

OPERATIONAL DEFINITIONS: For purposes of this study:

Admissions is taken to mean the initial experiences of entrance procedures, involving (1) the appraisal of the individual potentialities and limitations of students and their probable success in various courses and curricula and then (2) the administrative interpretation to the applicant and his family of the decisions of acceptance or rejection for matriculation as well as the advantages, limitations, and services of the institution.[22]

Financial aid is defined as the counseling and aid offered both in the assessment of the applicant's need and in the knowledge of resources available to students in the form of scholarships, grants-in-aid, loans, and work-study and part-time employment opportunities.

Counseling services provide for and include appraisal, counseling, informational data, placement, and follow-up--all within an atmosphere of self-exploration, self-understanding, self-actualization, and responsible independence.[23]

Student welfare services include health, housing, and food provisions for those attending colleges and universities.

Social activities are defined as the extracurricular[24] functions of the

collegiate way of life, such as honor societies and student government.

Evaluation is operationally defined as (1) the degree to which each of the several student services relates to the institutional objectives and is influenced by them, (2) the efficiency of daily operations, (3) the attitudes of the college community toward the program, (4) the morale of the staff, and (5) results.[25]

METHOD OF INVESTIGATION: This study focused on the present student personnel services program at the Kutztown State College and suggested a need for the development of a usable and workable student personnel services program--as indicated by both the literature and the questionnaire used.

The researcher developed a questionnaire which attempted to gather pertinent information and data from students, faculty members, and administrators. Thus, the six variables defined under OPERATIONAL DEFINITIONS were specifically analyzed according to: strengths and weaknesses of present policies, administrative awareness, adequacy of the existing system, need for desirable trends, and recommendations.

The questionnaire used the Likert-type forced response rating scale to investigate financial aid; dichotomous questions to analyze admissions, counseling, student welfare services, and social activities; check-lists to investigate counseling; and open-end questions to analyze counseling, social activities, and evaluation. Thus, from both the literature and the questionnaire a student personnel services program was developed.

POPULATION: This study's research model was intended for the Kutztown State College which this writer used as his laboratory. Kutztown State had 4,563 students and 264 faculty members. Of the latter, forty-seven occupied administrative offices: two presidential, fifteen in academic affairs, fifteen as department heads, nine in student affairs, and six in business affairs.

An accidental sample of 210 was drawn from the Kutztown population of 4,827, which number consisted of students, faculty members, and administrators. Inasmuch as the study was not statistical, this writer via interpolation could justify this sample as representative and adequate--particularly since W. Allen Wallis, Dean of the Graduate School of Business, University of Chicago, supported a sample size of 4.2 per cent of the universe of 98 per cent precision or better in 99 samples out of 100, provided that the population approached 5,000 in number. Specifically, a sample of 209 in a total number of 5,000 population was supported.[26]

ANALYSIS OF DATA: Operationally, data were gathered from the question-naire responses and then tabulated. Trends were then analyzed. From this analysis, a model was designed. This model provided the structure for the development of a student personnel services program--which program was suggested from both the literature and the questionnaire model.

RESULTS: On the strength of the research results, recommendations included: (1) need for humanizing admissions procedures as a means of providing better communications; (2) study of the student financial

needs; (3) ways and means of providing an efficient counseling center;

(4) investigation of adequate health, housing, and food services;

(5) analysis of relevant social activities to meet the challenges of

today's students; and (6) provision for periodic evaluation, research,

and development of the entire student personnel services program. Thus,

the study provided needed information for the Kutztown State College,

and the model should have provided a basis for enabling the college to

serve as a model institution for other public state colleges to emulate.

RELATED LITERATURE: In addition to the previously cited footnote sources

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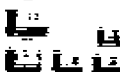
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FOOTNOTES

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COMPUTER-ASSISTED SELF-INSTRUCTION
IN INTERACTION ANALYSIS, Part 2*
Project Report, March 30, 1971
by J. David Fetter

At the Pennsylvania Association for Teacher Educators Central

Regional Meeting held October 16, 1970, Mr. J. David Fetter and Dr.

David Salstrom of the Lock Haven State College faculty conducted a

clinic on Computer-Assisted Self-Instruction in Flanders' Interaction

Analysis. This provided an opportunity to use the extended response

phase of the computer program.

The extended phase of the program involves additional statements

of value judgments related to interaction which takes place in the

classroom. It is important to point out that the program is not re-

quired by the teacher education division of the college nor is it in

any way used for a terminal evaluation of any sort. This program is

being used as an experimental learning device. Hollerith statements

are used as single responses to percentages derived from the columns

and rows in the Flanders' matrix. Single response analyses present a

problem, however, if they are used continuously over a period of time.

These single responses in the IBM printout return become a

stereotyped statement to the user of classroom interaction analysis.

It is suggested at this point in the project that the programmed

analysis responses be used as initial teaching/learning devices rather

than as feedback devices for continuous usage. Problems also appear

with the usage of the "remote batch system" in mail communication

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*Part I of the project report was published in June 1970 in Re-
search For Better Teaching in Pennsylvania Schools, 1969-1970 by the
Pennsylvania Association for Student Teaching, Edited by Dr. Ben J. Wiens
Chairman, Department of Education, Moravian College, Bethlehem, Penna.

with the college computer center.

The following three problems with their attendant solutions are pertinent to the project:

1. <u>Effective remote job entry environment</u>. It may be helpful to point out that these problems described may be unique to the central Pennsylvania environment served by the student teaching program at Lock Haven State College. At the present time, with the exception of State College Area Schools in which student teachers have direct access for processing their cards, the student teachers and the supervisors mail their cards to the campus computer center. This mailing usually presents a five day time delay. The teacher normally waits until the end of the day to mail the cards, then there is a two-day mailing wait by the processor. Processing time, including "fail-soft" problems such as improperly coded mark-sense cards, takes at least two days with the return mail delay on the printout return. An effective solution is an "on-line" hook-up with one of the schools or the college computer center. A partial solution would be to make an arrangement with the computer center in one of the county vocational-technical schools.

2. <u>Effective management of data processing project</u>. Cards are sometimes "scrambled" at the computer center. If these decks are processed it may involve up to eight per cent error on the printout return. This large error is prohibitively high and especially so in sensitive Flanders' categories such as "praise" or "criticism." Computer personnel must be careful to follow the iteration marked on the back of the cards. Another problem is the chore involved in re-marking improperly coded mark-sense cards. Sometimes printout returns with

obvious erroneous information are mailed indiscriminately to the student teacher. To correct these problems an interested and knowledgeable person familiar with both Flanders' Interaction Analysis and computer programing should be assigned to the computer center specifically for the project when the volume of printout return requests permits. In addition, an on-line computer connection, as mentioned previously would reduce the incidence for these types of erro....

3. Single response stereotyping. This problem is unique since it involves an internal programming question. For example, a student teacher was requested in a printout statement to "re-examine his lesson objectives" since the matrix indicated that the class was primarily "lecture"; yet the statement referring to the "use of praise" was very complimentary. This is a contradiction. This example illustrates the necessity for using the single response analysis for teaching purposes only. The student must go beyond the printout report in order to properly analyze his own teaching. A partial solution is presently being implemented in which many statements are programmed for each Flanders' category with a "random access" program to permit more variety to appear in the printout return. In addition, a "report generator" program presently seems to offer promise. And finally, a program is envisioned in which the computer may assemble its own responses from a "Gagné-type" dictionary program.

<div align="right">

---J. David Fetter
Secondary Education
Lock Haven State College

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THE RELATIONSHIP OF COUNSELOR AND
CLIENT NEEDS TO OCCUPATIONAL OUTCOMES
by Margaret Reed Elo

This research was primarily designed to find out if clients who

choose jobs fulfilling their counselors' but not their own needs report

lower job satisfaction than do clients who choose jobs fulfilling their

own but not their counselors' needs. A secondary purpose was to find

out if counselors whose clients are in jobs fulfilling the clients'

needs differ in personal characteristics from counselors whose clients

are in jobs fulfilling their counselors' needs.

The instruments used were developed by the Work Adjustment

Project at the University of Minnesota. They included the Minnesota

Importance Questionnaire (MIQ), Minnesota Job Description Questionnaire

(MJDQ), and Minnesota Satisfaction Questionnaire (MSQ).

The client group was 404 closed rehabilitated clients from the

Minnesota Division of Vocational Rehabilitation who had taken the MIQ.

Clients were closed in a specific job or occupational area having an

Occupational Reinforcer Pattern (ORP) developed from MJDQ ratings.

Closure jobs or areas were matched with ORPs using three digits or one

digit of the Dictionary of Occupational Titles code. For each client,

correspondence scores measured need-reinforcer (MIQ-ORP) similarity for

closure job and occupational area.

The counselor group was the 51 counselors of these clients.

Counselors had taken the MIQ and a Personal Data Sheet questionnaire.

For each counselor, correspondence scores measured similarity between

counselor MIQ and ORPs for each of his client's closure jobs and

occupational areas.

Four measures of correspondence were used: D^2; $G\pm1SD$; $G\pm2SE_M$; and $G(Q_1-Q_3)$. For each measure, client-counselor correspondence pairs for client sub-groups were distributed into correspondence table quadrants as follows:

Quadrant		Correspondence
1	-	High Client, High Counselor
2	-	High Client, Low Counselor
3	-	Low Client, High Counselor
4	-	Low Client, Low Counselor

Two client job satisfaction measures were obtained by a follow-up questionnaire: three, short-form MSQ scales; and a closure job satisfaction question.

Three hypotheses were tested. The first was that high, low correspondence pairs for clients would distribute over all quadrants, identifying different correspondence pair types. Findings were positive.

The second, major hypothesis was that job satisfaction would be higher for clients in jobs reinforcing their own needs (high client correspondence), and lower for clients in jobs reinforcing their counselors' needs (high counselor correspondence). Differences in mean job satisfaction scores for clients in various quadrants were tested using F tests. Findings gave some support for the hypothesized relationships between counselor or client correspondence type and client job satisfaction. There were 288 tests made using all the combinations of 3 quadrant comparisons, 4 measures of correspondence, 3 client groups, and 8 tests on satisfaction. Among the 96 tests of the Quadrant 2 versus 3 comparison, all 6 tests using $G\pm1SD$, clients with specific job ORPs, and the MSQ were significant. Under these rigorous

conditions clients whose jobs were congruent with their needs had higher
satisfaction than clients whose jobs were congruent with their counselors'
needs. Overall, use of G+$\bar{1}$SD, clients with specific job ORPs, and the
MSQ resulted in the most significant differences.

The third hypothesis was that counselor characteristics would
differ, using F and chi-square tests, for high versus low counselor
correspondence pair types. No consistent, conclusive differences in
characteristics were found. There were 7 significant differences among
224 tests, for 3 out of 14 characteristics. Using D^2 and G+1SD, D^2
resulted in more significant differences.

Some conclusions could be drawn relating clients' job satis-
faction following counseling to correspondence of counselor and client
needs with client job reinforcers. Future research should use
counselor characteristics more relevant to counselor influence, and
should incorporate information on the counseling process to determine
extent of counselor influence in the client-counselor interaction.
Replication of the research supporting the major hypothesis is recommended
because of the consistency of these results.

STUDENT TEACHING ROSTERS BY
ELECTRONIC DATA PROCESSING
Francis A. Colabrese and Christine J. Kitchen

Electronic Data Processing (EDP) is now being fully utilized at

Lock Haven State College for assigning student teachers in the secondary

education curriculum. Dr. Irene Russell, Dean of Teacher Education, and

Professor Ralph E. Kuhn, then of the Computer Center, developed a pro-

gram, first used in 1967, whereby almost all the many variables in-

volved could be accommodated in rostering nearly 200 students. Since

the standard situation in secondary education is for each student

teacher to have two distinct nine-week periods, usually one in junior

high (or middle school) and the other in senior high (or upper school),

this means that there are actually twice as many assignments as students,

viz., 300-400.

    The availability by quarters of cooperating teachers and indivi-

dual school district policies restricting utilization of their

services constitute just a few of the important variables. The distribu-

tion of the students into five supervisory regions so that there is

equity in supervisory loads must also be considered. These regions are

spread about 300 miles apart with three in central Pennsylvania, one in

suburban Philadelphia, and one in Philadelphia's inner city.

    In fact there are more variables involved in the rostering of

student teachers than in rostering of any other course or course sequence.

Thus, the College of Education recognized early the need for using the

computer and it was so employed by the Division of Secondary Education

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    Dr. Colabrese is director of the Division of Secondary Education
and Miss Kitchen is a computer programmer.)

before being used in general college rostering.

The computer equipment used for scheduling student teaching assignments at Lock Haven State is an IBM 1130 computer, 2501 card reader, 2310 disk drive, and a 1403 printer.

Scheduling student teacher assignments as it is now done involves six programs in three steps. The first step is the creation of the disk files: one each for the participating high schools, the cooperating teachers, and the student teacher applicants.

The scheduling program matches the student teacher applicants with the cooperating teachers. The program reads a record from the student teacher file, then creates a second file of cooperating teachers made of those cooperating teachers who are teaching the correct subject in the correct semester for that student teacher. These teachers are assigned a weighted value, the higher number being given if they teach in the area and type of community preferred by the student and if they do not teach in the high school from which the student graduated. The cooperating teacher with the highest weighted value is assigned the student for the first quarter of that semester. The cooperating teacher is then coded "unavailable" for that quarter and for other quarters according to the rule set up by the high school. For the second quarter the weighted values of the cooperating teachers are adjusted to avoid sending the student teacher to the same school or level if possible. The cooperating teacher with the highest value is assigned the student for the second quarter, the teacher is coded unavailable as before and the program reads in the next student teacher record.

EDP has enabled the supervisors and administration to look toward more creative and innovative patterns since their time is not needlessly filled with clerical minutia. One benefit resulting there from has been the establishment in 1969 of specialized supervision in social studies education. Another has been the establishment that same time of the inner city program.

As information on student teachers, cooperating teachers, and participating schools becomes more refined and is fed the computer, the matching of student teachers and their assignments can be more sophisticated by EDP than could ever be possible by manual processing except in the very smallest colleges with the very smallest enrollments in education.

Student teaching, the most highly individualized of courses, has been a "natural" for EDP rostering at Lock Haven State College.

THE EFFECTS OF A CULTURAL ENRICHMENT UNIT ON THE ACHIEVEMENT
AND ATTITUDES OF FOURTH GRADE PUPILS
by Alma Hartman Schlenker[*]

A concern for curriculum enrichment and improvement was influen-
tial in determining the problem in this research study. It is a widely
accepted fact that the demand for knowledge and related learning exper-
iences has had a dynamic effect upon the development and use of instruc-
tional materials and methods. The traditional textbook approach has
been supplemented, and in some cases, replaced by diversified types of
communication, many of them in the form of first-hand experiences and
activities with pupils using simulated or actual objects, and learning
media.

The study was conducted to determine the effects certain specially-
prepared materials would have upon achievement. The subject area desig-
nated was social studies, and the educational level was the fourth grade.
The research involved twelve fourth grade classrooms in eight school
districts in Lehigh County, Pennsylvania.

For many years a unit of instruction based on the local history
of the county was included in the fourth grade social studies curriculum
in all of the school districts in the county. The placement of this
instructional unit at the fourth grade level corresponded with a similar
grade level placement at a national level in the curriculum planning of
nationally recognized educational organizations.

In 1967, a grant under Title III of the Elementary and Secondary
Education Act was allocated to the Office of the Superintendent of the

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*Thesis (Ed.D) Temple University, 1970.

Public Schools of Lehigh County, Pennsylvania, for the development of an
educational resource center known as the Lehigh County Cultural Center.
It was located in Allentown, Pennsylvania.

The major concept which predicted the emphasis of the Cultural
Center was that teachers and students were in need of a large variety of
media to enhance and enrich learning activities at all levels of the
educational continuum. The Cultural Center staff recognized an oppor-
tunity for becoming directly involved in the development and preparation
of instructional materials related to many curricular areas, and especially
to the social studies unit on the history of the county. Heretofore,
classroom teachers were individually responsible for providing their own
instructional materials. Although many experienced teachers had accumu-
lated purposeful and effective materials, a need for additional well-
designed and effective ones was recognized.

The materials prepared by the Cultural Center consisted of
pictures, tapes, slides, maps, artifacts, displays, and other resources.
They were distributed to teachers in various forms: as single items,
collections, kits, sets, displays, and specimens. The types and forms
of materials were determined by teacher requests and guidelines offered
during the early stages of planning.

The research design for this study provided for three treatments,
two experimental groups and one control group with a pretest-posttest
plan. The design further specified that the instructional materials
from the Cultural Center would be introduced into the unit on county
history for Treatment I following inservice sessions attended by the
four teachers responsible for the four subgroups or classes in that

treatment. A second experimental group, Treatment II, also consisting
of four subgroups, had the use of the same materials without the in-
service sessions. A third group of four classe: designated as Treatment
III, served as the control group and had neither the use of the materials,
nor the inservice sessions.

The research hypothesis stated that the pupils in the two experi-
mental groups, Treatments I and II, who were exposed to one or both of
the variables of teacher inservice training and prepared instructional
materials, would receive significantly higher scores in the posttest than
those in Treatment III, the control group.

A pretest based on the content of the county history was adminis-
tered to all groups at the outset of the research project. Following a
six-week instructional phase, a similar test with items on the same
social studies content was administered to all groups as a posttest.
The tests were of a teacher-made-type, constructed for the specific needs
of the experimental design. The content was limited to the type and
amount of subject matter available at that time through the efforts of
the Cultural Center, and previously existent information. The chief
emphasis of the pupil evaluation was on achievement in cognition, with
limited regard for supplemental pupil attitudes and preferences.

The results from the posttest demonstrated improvement in the
achievement of all groups over the pretest scores. An analysis of these
data produced the following findings: (1) the mean score for all groups
on the forty-item pretest was 12.60 and on the posttest 19.36; (2) the
standard deviations showed differences from the pretest to the posttest;
(3) an analysis of variance indicated that there were differences among

the pretest scores at a significance level of .025 with an F ratio of
4.451; (4) an analysis of covariance of posttest scores with the pretest
as the covariant resulted in an F ratio of 9.791, significant at the .05
level, and indicated that there were differences which could have been
influenced by the experimental variables; (5) the Tukey procedure for
comparing means substantiated the premise that differences among and
between treatments existed and were significant at the .05 level.

A separate analysis of the data on the supplemental test items
based on attitudes was conducted and the following findings resulted:
(1) seven of the total group responses revealed that there were no differ-
ences between the expected and observed responses; (2) three of the ten
items showed that significant differences did exist among the treatments;
(3) an analysis of percentages of pretest and posttest responses indi-
cated that in seven out of ten items there were no substantial changes
in attitudes between the pretest and posttest situations. The results
of the other three items seemed to indicate that attitudinal changes
did occur between the pretest and posttest situations. No attempts
were made to establish statistical significance or causation beyond
this level of the initial findings.

Conclusions

A review of the purposes for the study as originally stated indi-
cated that they had a high degree of satisfactory fulfillment. The
questions originally posed were answered. A summarization of the effects
of the findings upon the purposes of the study follows:

1. The prepared instructional materials and other resources,

aids, and activities included in the unit represented a means of influencing instruction and learning.

2. The data reflected a significant difference in results between experimental and control groups.

3. The results presented implications for the continuance of this unit and for the development of similar ones.

4. The findings would warrant recommending this type of program to other districts and counties.

5. The findings gave clear evidence that some of the objectives of the Cultural Center had been realized.

The following related needs also received creditable recognition:

1. The unit on the history of Lehigh County was found to offer unlimited opportunities for application in the social studies content, and the specially-prepared materials provided unique opportunities for improving the teaching of the unit.

2. The inservice training program was considered invaluable by informal observation and significant by statistical standards.

3. The findings provided strong indications that results might have been influenced by the use of the materials.

4. The evaluative procedures provided information about the unit which was not previously available.

5. The findings contributed to the recommendation of the Evaluation Committee that the Cultural Center should receive continued financial support.

Implications and Recommendations

Statistical findings as well as other related results of the research project pertaining to the cultural and historical study, provided implications for the teaching and learning process of elementary school children, and the instructional procedures of teachers at this level.

Although major findings centered on the impact that the differences in results among the three treatments would have, it was also considered important to note that all of the subgroups (twelve) experienced gains in raw scores and means from the pretest to the posttest. The incidence of these increases, regardless of experimental design specifications served as strong evidence to support the assumption that other factors could have influenced the results. Some of these contributing conditions may have been: (1) effectual teaching performance on the part of all the teachers, and (2) the inevitability of noticeable gains due to the strengthening of the planning and instructional phases of the unit.

As knowledge and innovative techniques have increased, teachers have continued in their search for ways to improve the means by which children attain the educational goals which have been cooperatively determined. They need motivation, materials, new activities, and first-hand experiences.

Unusally talented and creative personnel with available time are major ingredients which allow for the production and availability of these instructional media. Some educators have demonstrated a willingness to purchase commercially-produced products of this type to supply these needs.

The necessarily expensive, and not always adaptive features of these materials produced by large manufacturing publishing companies, sometimes provide teachers with less than adequate materials for specific needs and emphases; a situation often accepted only for its expediency. It would seem apparent, therefore, that supplying these needs shared by pupils and teachers should become a joint effort involving the community and its diverse agencies, the educational system and its capable personnel, as well as educationally-oriented commercial organizations.

In search of the literature for this study, the MATCH Project, Children's Museum, Boston, presented the most feasible approach for the production of curriculum-oriented teaching materials.[1] The kits and multi-media devices provided by the Lehigh County Cultural Center were closely related to the MATCH concept. The MATCH Project involved an evaluative phase which resulted in suggested needs for changes and revisions of materials. The study of the Lehigh County unit did not include this level of evaluation directly. If the program had continued this should have been the next step and would have resulted in the refinement and revision of the materials. The Cultural Center was an example of the type of school-community-related agency which could offer unique services to the education program.

The reactions and comments of teachers who participated in the county project clearly established the need, not only for these teaching materials, but also for inservice opportunities to develop and learn about all types of first-hand experiences. The project, as it was

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[1]Kresse, op. cit., p. 10.

conducted, presented the inservice opportunity to a limited number of
teachers by research design specifications, but the opportunity was
later extended to all interested teachers through a county workshop.
The overwhelming response by fourth grade teachers in the county rein-
forced their expressions of interest and need.

Not only was it recognized that supplementary materials were a
vital factor in the successful teaching of the unit on Lehigh County
history, but that basic, accurate background information and general
knowledge about the history of the area was also necessary. The Cultural
Center actively participated by gathering content and information from
sources not previously tapped. The public relations benefits on a
school-community-industry basis were recognized. Continued efforts
could result in the production of an extensive storehouse of information.

The results of the research project clearly identified implica-
tions for curriculum development and teaching-learning techniques at a
local level, but also offered vital information for wide-range adapta-
tion. The following list is a summary of some of the educational
implications derived from the research project:

1. The need for additional, exciting, and purposeful learning
    materials continues to be felt by teachers.

2. The materials developed by the Cultural Center had a con-
    structive effect upon the teaching of a single unit in
    the social studies curriculum, and could serve as a model
    for extension in other subjects.

3. The efforts of organizations, such as the Cultural Center,
    offer opportunities for joint community-school endeavors.

4. The efforts of the Cultural Center were task-oriented,
    based upon a specific need, and the results were directly
    applicable to the teaching and learning situation.

The research study also revealed numerous conditions which would
require additional information, changes in procedures, and follow-up
opportunities.

Measuring Instruments

The tests constructed for the purposes of the research study
were considered valid and sufficiently reliable. Although limited in
content, they could be used by teachers as similar indicators of
achievement and for other evaluative purposes. The section on attitudes
was considered less adequate since the limited number and types of items,
and response choices, limited pupils' opportunities for an effective
expression of beliefs, attitudes, and values.

Recommendations: That items be constructed with more emphasis
        in the area of critical thinking and in the analysis and
        synthesis processes,

    That a complete item analysis be conducted so that revision
    could be accomplished in a systematic manner,

    That the supplement in the test related to attitudes be
    revised into a survey form rather than the closed-response
    form, and that this section of the tests be increased in
    length. Results could then undergo a more detailed statis-
    tical analysis.

Results of the Study

The research study presented opportunities for an extension of the purposes of the research and follow-up procedures.

Recommendations: That a longitudinal study be initiated to analyze the results from administering the same tests, or revise forms, to the same groups of pupils when they entered fifth grade, and again in seventh grade. This would result in providing further guidelines for the revision of content to increase retention and application of the knowledge.

That other effects such as the impact on pupils' families, be studied through the administering of a survey of family awareness, interest, and appreciation. If this emphasis resulted in an increase in these factors, successive groups of fourth grade pupils would enter upon the study of a unit on county history with a more extensive background of information which would greatly affect the curriculum.

Curriculum Development

The research can also serve as a source for the continuing study of the social studies curriculum. This particular unit was an attempt to relate pupils' local heritage, culture, and community influence to the broad scope of world communities. Additional research could establish relationships in other social studies topics as well as in other subject areas.

Recommendations: That the development and use of teaching and learning materials be extended in a similar manner to other

social studies topics, and to other subjects, as science
and language;

That efforts be continued toward the direct involvement
of teachers in the planning and development of such
teaching and learning materials by means of regularly
scheduled, released time, work sessions.

Financial Support

The fact that teaching and learning practices of a less tradition-
al nature are often regarded as "extras," sometimes affect budgetary
provisions. Federal funding may have been a stopgap measure for the
realization of some of these innovative practices, but research can
assist in convincing people of their value and the advantage to regular
budget provisions.

> Recommendations: That interested, capable teachers and adminis-
> trators join forces to convince educational foundations,
> and school governing bodies of the value and necessity of
> all forms of innovative techniques and materials, and that
> the financial means for providing them be made available,
>
> That other community-related and educationally-oriented
> enterprises be investigated as sources for participating
> in joint efforts to continue providing diversified media.

Recommendations for Further Study

Further research studies which are suggested are related to a
number of the design features and data-gathering procedures of the

current study.

Data-based. Consideration might be given to other types of evaluation which would shift the emphasis from achievement scores to other evaluative results. Three data-gathering procedures are suggested.

1. Test attitudes and value structures through the use of attitude scales, surveys, or questionnaires.

2. Measure effects through pupil reactions to graphic and visual materials, such as slides and photographs.

3. Observe and study pupil reactions through their entries in daily diaries and logs which describe and record the experiences and activities offered during the study of the instructional unit.

Instructional unit. Evaluation could be based on the use of different types of instructional units. Included in the procedure for initiating the study would be the development of an instructional unit by the researcher. The study would involve a comparison of a unit constructed according to prescribed procedures for unit development and a less formal individual-teacher-constructed unit.

Instructional materials. In the case of the current study, the source of the instructional materials, namely, the Cultural Center, no longer exists. Other types of accessible regional, district, and community centers would offer opportunities of a similar nature to research the effects of the use of instructional materials. Suggested studies of this type follow.

1. Identify an available resource center, such as a regional instructional aids center, a district instructional materials

center, or a museum of a specialized type, such as a museum
of history or science. Conduct a study based on the mater-
ials offered by such a facility.

2. Another approach for evaluating materials might suggest
the total involvement of pupils through pupil-teacher coop-
erative efforts in preparing materials. Conduct a study
comparing the use of teacher-pupil-produced and adapted
materials.

3. Evaluate the effects upon pupil responses by two instruc-
tional approaches; one, a structured approach through the
use of textbooks only, and two, a less structured approach
using other specified instructional materials exclusive of
textbooks. This type of study, applicable to the social
studies area, probably should deal with content of a
general nature and not be limited to the specific geographic
area involved in the current study.

Background of teachers: Include in the study research on the
background of the teachers who are participating. Two such studies would
be:

1. Evaluate the results of pupils in light of the teaching
experience and educational background of the teachers
responsible for the participating groups.

2. Compare groups of pupils taught by beginning teachers who
used specially-prepared materials such as those provided by
The Cultural Center, and groups of pupils taught by exper-
ienced teachers who used their own teacher-made and
individually-accumulated materials.

Sampling population. For the purposes of the current study, pupils educated in the schools of the one large city in the county were excluded since they benefited from the services of the Cultural Center to a limited degree. Two studies are suggested which would involve the participation of these pupils.

1. Conduct a study comparing the results of the use of materials available on a district basis from the district (city) instructional materials center, and those provided by the Cultural Center.

2. Evaluate the effects of the instructional unit on the city pupils in comparison to those pupils residing in the suburbs who were included in the original research.

ON BECOMING A TEACHER
by Lorraine Morgan *
Vivien Richman

The Teacher Education Program at Chatham College, cooperatively
with Carnegie-Mellon University (C-MU), has been in the process of re-
defining itself in order to meet the changing needs of today's college
students and the teachers of tomorrow's school children. At the present
time, Chatham College enjoys program approval in Elementary and Secondary
Education from the Pennsylvania Department of Education. The College
has been, and is engaged in a cooperative program with Carnegie-Mellon
University which will lead to the certification of teachers of both pre-
school and elementary school children (N-3 and K-6).

The Chatham - C-MU program consists of a flexible, individualized
sequence of courses, experiences and seminars on both campuses, in the
C-MU Children's School, and in a variety of public and private schools
in the community. The faculty is committed to the proposition that the
process of becoming a teacher is both developmental and continuous.

The teacher education program is dedicated to the preparation and
development of teachers who:

- are generally healthy and wholesome people who have achieved a
  moderate degree of self-awareness and self-understanding;
- are generally well-educated and have acquired competence and
  skills in content areas and in problem-solving;
- have made a serious commitment to the education and development
  of children;

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Richmond, Ph.D., Assistant Professor, Chatham College, Pittsburgh, Pa.

- understand the nature of the learner and the learning situation
  and can plan, with children, programs of activities which will
  facilitate and enhance the learning process;
- understand and be able to interact effectively with the school
  community and the larger society.

It is the intent of the faculty to maintain a program which is
individualized and personalized, so that each student may be enabled
to develop and grow in his or her own unique directions. The program is
sufficiently flexible to accomodate the individual differences among the
students. Opportunity is provided for the development of counseling,
instructional and human relationships between students and faculty.

The philosophy of the program has evolved around several
assumptions:

- Learning is an active process which occurs most effectively
  when the student shares the responsibility for his own learning;
- The theoretical bases of education can best be acquired and
  integrated through many and varied opportunities for the
  student to apply them to practical, first-hand experiences
  with children.
-The integration of subject matter competencies with teaching
  methodologies is a more effective approach to the preparation
  of teachers than the traditional teacher training curriculum
  which features separate "methods" courses for each content area.

The scope of the program may be estimated by the course titles
required for the completion of the Pre-school and Elementary Education
sequence: Introduction to Education, Communication Skills and the Arts,
The Contemporary Pre-school, The Contemporary Elementary School, Junior

Field Study and Seminar, and Student Teaching and Seminar. At the Secondary level, the required courses are: Introduction to Education, Principles of Secondary Education, General and Specific Methods for Secondary School, Student Teaching and Seminar, in addition to the completion of an academic major. Each of these courses carries with it a field experience component of a minimum of one half day per week in a classroom situation. This arrangement provides each student with several terms of supervised practical experience before student teaching.

Selected readings augment and enrich the student's growth. They grow out of the student's need to "find out" rather than being arbitrary, mass reading assignments. Systematic and scholarly study is an important part of the program, but it is not accomplished in a set, prescribed sequence.

The primary concern of the program is to provide and to structure appropriate learning experiences for each student. These experiences include lectures, demonstrations, discussions, films, micro-teaching, video taping, specialist consultants, tutoring, small group and whole class instruction, library research, written assignments, and mutual peer evaluation. Students are given opportunities to observe master teachers, experience in and critical analysis of a variety of classrooms (programmed, open, traditional, experimental, etc.), lesson and unit planning, including the preparation of behavioral objectives, use of audio-visual equipment and techniques, team experiences and self-evaluation techniques.

Early and continued exposure of the student to children in real schools serves several purposes.

a. It provides the faculty with ample opportunity to observe and
    evaluate the student as he grows and develops in the process
    of "becoming" a teacher. Data may be accumulated, based on
    the student's performance with children and other school per-
    sonnel, and in conferences with the student, which enable the
    faculty to counsel out of the program those students who are
    dubious candidates and who may be profitably re-directed to
    other areas of study early in their college careers. Those
    experiences also permit the early identification of the
    talented student who may then be given encouragement and
    support in developing his own unique teaching style.

b. It provides guided opportunities for the student to test
    his own commitment to the profession, to measure his own
    seriousness of purpose, and to decide, without loss of
    dignity or artificial pressure, whether or not he belongs
    in the classroom.

In this way, students who enter the sequence for questionable or
unexamined reasons, (because the teaching certificate is something to
"fall back on," because teaching is an obvious career choice for a young
woman, etc.) either screen themselves out of the program or are assisted
by the faculty to consider alternative courses of study.

Students are advised and encouraged to register for related
elective courses in other departments which will enrich their prepara-
tion for the profession. Such courses include: Developmental Psychology,
Child Growth and Learning through Movement, Approach to Creative Dramatics,
Cognitive Processes, Tests and Measurements, etc.

For second semester seniors who have completed the sequence and their student teaching, the Education Department offers a special elective course titled, Teaching in an Urban Setting, which also carries a supervised field experience component - this one in an inner-city school.

A folder for each student is maintained in the Education Department office and the responsibility for keeping it up-to-date is shared by faculty and students. The folder contains the following information:

a. Personal data sheet

b. Autobiography

c. Course transcript

d. Resume of background and experiences

e. Test data

f. Record of field experiences

g. Term papers

h. Notes from interview and conferences

i. Final professional placement and/or Graduate School

j. Any other evidence of the acquisition of skills and competencies.

The maintenance of the folder is essential to the continued individualization of the program. It permits the faculty and the student to record and evaluate individual growth and development and to identify areas of strength and weakness. It serves as a basis for choosing field placements which meet the needs of each student and it is an invaluable aid in the counseling process.

Although course descriptions are framed in terms of behavioral objectives, it should be noted that the program has goals which cannot easily be described behaviorally or measured objectively. These goals,

no less important than the competencies specified in the course descrip-
tions, may be thought of as "process" goals. These include the following
less-than-tangible and hard-to-measure qualities:

The development, over time, and through guided experiences, research
and study of:

a. wholesome and consistent attitudes toward children,

b. self-understanding, self-awareness and a developing sense of
   identity,

c. increasing understanding of and respect for children and adults
   who are culturally different,

d. the understanding that "knowledge" is uncertain and relative;
   that there may be more than one "right" answer,

e. the belief that problem-solving techniques and skills are more
   valuable than the rote acquisition of "facts" which may be
   forgotten or become obsolete,

f. acceptance, in theory and practice, of the assumption that
   each child is unique, and that the chief role of the teacher
   is that of facilitator and leader,

g. the understanding that the child's social and emotional
   development is inextricably related to his intellectual and
   academic growth,

h. the development of a philosophy of education, a commitment to
   a set of values and a unique teaching style.

Perhaps some of the effectiveness of the Chatham - C-MU Teacher
Education Program is related to the diversity of faculty specializations
and the fact that all of them have been or still are teachers and

consultants in public and private elementary and secondary schools.

For a program to be implemented only by theorists would tend to weaken a program. Continuing interaction by faculty with the systems of education, children who possess a myriad of individual traits and communities that reflect the divergence of changing society, is essential for preservice teachers for the realities of the profession. Programs seeking competent faculty should engage personnel who represent a willingness to embrace a philosophy that treasures a commitment to the larger society as well as the education system.

THE LAST LESSON

by Edward B. German*

It is the last scheduled practicum. The professor in his revered role of teacher of teachers observes the student teachers as they file into the classroom. He silently evaluates his own effectiveness. The concepts and the instructional behaviors he tried to develop in his students run wildly through his mind...Teaching is not telling... Behavior is caused... Skill in teaching young people how to think and live in a changing world... Interaction Analysis... Dedication...

Now the class comes to order. The professor begins, "For the last lesson, I shall present to you what in my humble opinion is the most beautiful and meaningful advice for teachers. To enhance the value of these words of wisdom, I shall first tell you this simple story:

"Back in the days of ancient Rome, there was this great and wise orator. He went around the Roman countryside giving eloquent speeches and demonstrating his great knowledge to the people. He always began his oration by pointing to a prominent local citizen and saying, 'You there, I have a little bird in my hand. Is it alive or is it dead?'

"If the citizen answered 'It is alive,' the orator would gently crush the life out of the small bird, and let it fall lifeless to the ground.

"If by chance, the citizen replied, 'It is dead,' the eloquent speaker would open his hands and the bird would fly away. Always the local dignitary was wrong, and always the orator was right and so very wise.

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"However, one day, the orator met a man wiser than he. In answer to the question, is it dead or alive, the citizen replied, 'Sir, the answer lies in your hands."

"In the same way," continues the professor, "As teachers you shall hold the future in your hands. For children shall be in your hands, and children are the future."

The professor pauses, then in a desire to motivate and practice what he taught says, "I shall read all but the last word of this beautiful message which was written over a hundred years ago by John Ruskin":

"Education does not mean teaching people to know what they do not know. It means teaching them to behave as they do not behave... It is not teaching the youth the shapes of letters and the tricks of numbers; and then leaving them to turn their arithmetic to roguery and their literature to lust. It is, on the contrary, training them into the perfect exercise and kingly continence of their bodies and souls. It is a painful, continual and difficult work; to be done by kindness, by watching, by warning, by precept, and by praise; but above all by _____ ."[1]

"But above all, by what" asks the professor.

Several students give plausible but incorrect answers. Then a student teachers correctly replies, "By example" which is the most significant quality according to Ruskin and the crux of the last lesson.

At this point the class is given over to the students for the interaction and dialogue which must mark and give value to the last lesson as it had to all previous lessons.

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[1]Adamson, John W., English Education 1789-1902, Cambridge, At The University Press, 1964, pp. 301-302.

Finally, the professor, filled with hope for the future says to his class, "I shall end our lesson with this old proverb":

What you are speaks so loudly I can not hear what you are
saying!

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